Draft Cleanup Action Plan

Bellingham School District Bus Garage

Agreement No. TCPIPG-2123-BSD-00032
1801 James Street Bellingham, Washington
Facility Site ID 57487227, Cleanup Site ID 9775

Prepared for:

Bellingham School District

Bellingham, Washington
June 30, 2025
Project No. M0837.02.005

Prepared by:

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MAUL FOSTER ALONGI

Draft Cleanup Action Plan

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The material and data in this report were prepared under the supervision and direction of the undersigned.

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Abbreviations

AOIs	areas of concern
ARARs	applicable or relevant and appropriate requirements
bgs	below ground surface
CAP	cleanup action plan
COIs	chemicals of interest
CSM	conceptual site model
CUL	cleanup level
District	Bellingham School District
Ecology	Washington State Department of Ecology
FEI	focused environmental investigation
MFA	Maul Foster & Alongi, Inc.
MTCA	Model Toxics Control Act
PAH	polycyclic aromatic hydrocarbon
POC	point of compliance
the Property	1801 James Street, Bellingham, Washington
the Site	Bellingham School District Bus Garage site
UST	underground storage tank
VOC	volatile organic compound
WAC	Washington Administrative Code

1 Introduction

1.1 Purpose

On behalf of the Bellingham School District (the District), Maul Foster & Alongi, Inc. (MFA) has prepared this draft cleanup action plan (CAP) for the Bellingham School District Bus Garage site (facility site ID 57487227; cleanup site ID 9775) (the Site) located at 1801 James Street in Bellingham, Washington (the Property) (see Figure 1-1). For over 70 years, the District has operated a bus storage and maintenance facility on the Property, situated adjacent to Whatcom Creek.

The purpose of this draft CAP is to identify the proposed cleanup action for the Site and to provide a preliminary explanatory document which can be finalized by the District at a later date. This draft CAP:

- Describes the Property
- Summarizes current conditions
- Summarizes the cleanup action alternatives considered in the remedy selection process
- Describes the selected cleanup action for the Site and the rational for selecting this alternative
- Identifies site-specific cleanup levels and points of compliance for each hazardous substance and medium of concern for the proposed cleanup action
- Identifies applicable state and federal laws for the proposed cleanup action
- Identifies residual contamination remaining on the site after cleanup and restrictions on future uses and activities at the site to ensure continued protection of human health and the environment
- Discusses compliance monitoring requirements
- Presents the schedule for implementing the CAP

1.2 Regulatory Framework

The District received an Integrated Planning Grant (Agreement No. TCPIPG-2123-BSD-00032) from the Washington State Department of Ecology (Ecology) to support environmental investigation and redevelopment planning activities at the Property. A CAP is required as part of the cleanup process under Chapter 173-340 Washington Administrative Code (WAC), Model Toxics Control Act (MTCA) cleanup regulations. MFA prepared this draft CAP as part of the grant agreement to serve as a preliminary document describing the proposed cleanup action selected in the cleanup options report (MFA 2025).

1.3 Previous Studies

1.3.1 1990s Tank Removal

According to Ecology's underground storage tank (UST) database, two steel USTs were formerly located on the Property: one 1,100-gallon diesel UST and one 6,000-gallon diesel UST (Ecology 2023). The two USTs were decommissioned on the Property in the 1990s, and Ecology issued a No Further Action opinion based on the results of the confirmation soil sampling (Ecology 2012). Groundwater was not assessed during the two UST removal actions. Documentation supporting Ecology's No Further Action determination was not available for review.

1.3.2 2023 Focused Environmental Investigation

In October 2023, MFA completed a focused environmental investigation (FEI) to assess five areas of interest (AOIs) based on historical operations, including the bus parking area (AOI 1), bus wash area (AOI 2), oil-water separator (AOI 3), in-ground hydraulic lifts (AOI 4), and former USTs (AOI 5) (MFA 2024). The FEI included soil and reconnaissance groundwater sample collection from ten temporary borings, B01 through B10, advanced to a maximum depth of 25 feet below ground surface (bgs) (see Figure 1-2). Soil samples were tested for a combination of analytes, including diesel- and oil-range organics, volatile organic compounds (VOCs), metals (cadmium, copper, lead, zinc, and mercury), and polycyclic aromatic hydrocarbons (PAHs). Groundwater samples were analyzed for diesel- and oil-range organics and VOCs. Localized impacts were observed from the FEI, as described further in Section 2.2 below.

2 Property Description

The Property is located in township 38 north, section 30, range 3 east of the Willamette Meridian. The Property comprises one 3.58-acre Whatcom County tax parcel (parcel number 3803305153150000) (Figure 1-2). The Property is relatively level, sloping slightly to the north, toward Whatcom Creek. The surfacing on the western portion of the Property consists of gravel, while the eastern portion of the Property is largely covered by asphalt and concrete.

The physical address for the Property is 1801 James Street in Bellingham, Washington. The Property is bordered by Meador Avenue to the south, Whatcom Creek to the north and west, and James Street to the east. According to a City of Bellingham zoning map, the Property is zoned as Industrial (City of Bellingham 2023). The Property is currently used by the District for bus storage, bus maintenance, and transportation operations. The Property includes three structures: an office building, an open-air bus garage, and a maintenance building. A bus wash area is present along Meador Avenue. The maintenance building has three in-ground hydraulic lifts. It was renovated in 2020; renovations included upgrading the oil-water separator system and improving existing connections to the sanitary sewer system.

2.1 Property History

According to historical aerial photographs, assessor documents, and interviews, the Property was developed by 1968 with the initial construction of the maintenance building. Prior to development, the Property was heavily vegetated. Some areas of the Property were cleared of vegetation by 1955. The bus garage building was constructed between 1976 and 1981 at the center of the Property. The western portion of the Property was developed with temporary structures/vehicle staging by 1972 with the office building constructed later in 1997. The Property has been used for bus storage and maintenance activities since its development (MFA 2023).

2.2 Human Health and Environmental Concerns

The FEI identified localized exceedances of lead, heavy oils, and carcinogenic PAH toxic equivalent quotient detections in shallow soil in the bus parking area, far from the maintenance building, oil-water separator, and former fueling operations above MTCA Method A cleanup levels (CULs) (see Figure 1-2 and Table 2-1). No detections of chemicals in groundwater exceeded MTCA Method A CULs at the Property (see Table 2-2).

A conceptual site model (CSM) describes potential chemical sources, release mechanisms, environmental transport processes, exposure routes, and receptors. The purpose of the CSM is to describe pathways by which human and ecological receptors could be exposed to site-related chemicals.

MFA prepared a preliminary CSM using data collected during the FEI (see Figure 2-2). The CSM is subject to additional updates pending additional data collection and/or changes in site conditions. Based on the results of the FEI, the primary source and release mechanisms appear to be:

- Operation of the bus wash area
- Use of impacted fill material during site development

MFA assessed numerous potential current or future exposure pathways at the Property. The following are primary exposure pathways:

- Incidental ingestion of surface or subsurface soil
- Incidental contact with surface or subsurface soil
- Inhalation of fugitive dust generated from surface and/or subsurface soil
- Inhalation of air vapors emanating from soil

Drinking water at the Property is provided by the City of Bellingham; however, it is assumed that groundwater is potentially potable unless otherwise determined, consistent with MTCA. Groundwater was generally encountered below a confining silt layer, preventing leaching; additionally, the results of the data collected in the FEI indicate that exposure to chemicals via drinking water would be insignificant.

Fishing is not an anticipated exposure scenario, as recreational fishing along Whatcom Creek is only legal below (i.e., west of) Dupont Street (see WAC 220-312-040 (306)(a)).

2.3 Cleanup Standards

2.3.1 Contaminants of Concern

The contaminants of concern at the Site include petroleum hydrocarbons, metals, PAHs, and VOCs.

The Property has been utilized for bus storage and maintenance activities since the late 1960s. Long-term vehicle parking and brake pads can release concentrations of petroleum hydrocarbons and metals to shallow soil (Ecology 2016). PAHs are often found in fuel and exhaust emissions of vehicles (Marr et.al 1999). Vehicle maintenance activities and former fuel storage operations can release petroleum hydrocarbons and VOCs (Ecology 2010).

There is public concern associated with the long-term operation of the in-ground hydraulic lifts and bus wash area impacting the adjacent Whatcom Creek. Therefore, shallow groundwater was assessed for the presence of heavy oil petroleum hydrocarbons and VOCs during the FEI. However, groundwater was generally encountered below a confining silt layer; therefore, transport of surface or near surface releases of contaminants to groundwater is unlikely.

2.3.2 Soil Cleanup Levels

For human health screening, soil results were compared to MTCA Method A CULs for unrestricted land use. For certain constituents, MTCA Method A CULs are not available, and data were compared to Method B direct contact CULs and soil protective of groundwater to surface water (i.e., vadose zone, fresh water) screening criteria.

MFA conducted a terrestrial ecological evaluation to assess the risk to ecological receptors on the Property. Based on terrestrial ecological evaluation, it was concluded that no adverse effects to plant, soil biota, or wildlife receptors are expected at the Property.

2.3.3 Groundwater Cleanup Levels

Generally, groundwater was compared to MTCA Method A CULs. For certain constituents, MTCA Method A CULs are not available and Method B CULs were applied.

3 Cleanup Options and Analysis

The results of the FEI provide a general understanding of environmental conditions at the Property, which can be used to evaluate cleanup needs. This section identifies potential options for addressing contamination at the Site.

3.1 Cleanup Option Alternatives

3.1.1 Option 1—Institutional Controls

Option 1 addresses the potential exposure of site occupants to contaminated soil through institutional controls, and includes the following actions:

- Institutional Controls—Concentrations of chemicals of interest (COIs) above applicable CULs would remain in soil on the Property. Institutional controls would be implemented to establish administrative protections to document environmental conditions and prevent exposure. Institutional controls would include an environmental covenant preventing the disturbance of soil on the Property.

Cost—The estimated probable cost for Option 1 is $30,000 (-30/+50%).

3.1.2 Option 2—Limited Excavation, Capping, and Institutional Controls

Option 2 uses a combination of limited excavation, engineering, and institutional controls to prevent exposure to contaminated soil. Option 2 includes the following actions:

- Supplemental Environmental Investigation—Conduct additional sampling around shallow exceedances to further characterize the horizontal extent of soil impacts and inform identification of highest exceedances for planned excavation areas.
- Limited Excavation and Capping—Excavation of shallow soil in targeted areas (up to ~3 feet bgs and 160 bank cubic yards) to remove the highest exceedances (see limited cleanup action areas on Figure 3-1). Remedial excavations would be lined with demarcation fabric before being backfilled with clean material (soil and gravel), which would act as a permeable cap for deeper exceedances. Excavated soil would be characterized prior to disposal offsite.
- Institutional Controls—Some concentrations of COIs above applicable CULs would remain in soil on the Property. Institutional controls would be implemented to establish administrative protections to document site conditions and prevent exposure. Institutional controls would include an environmental covenant preventing the disturbance of soil on the Property and a site management plan outlining procedures for conducting cap inspections and repairs.

All excavated soil would be disposed of offsite at an appropriate landfill. It is assumed that all excavated material would be disposed of as nonhazardous waste. Dewatering within the excavation is not anticipated.

Cost—The estimated probable cost for Option 2 is $250,700 (-30/+50%).

3.1.3 Option 3—Complete Excavation and Offsite Disposal

Option 3 addresses the potential exposure of site occupants to contaminated soil by complete source removal and includes the following actions:

- Supplemental Environmental Investigation— Conduct additional sampling to further characterize the extent of soil impacts and inform excavation areas. A targeted excavation extent may be confirmed by field samples without additional characterization.
- Excavation and Offsite Disposal—Excavate extent of soil impacts in the north, west, and east cleanup action areas, as follows (see cleanup action areas on Figure 3-1):
  - North Cleanup Action Area: Approximately 4,110 cubic yards of material, with a maximum depth of 10 feet bgs.
  - West Cleanup Action Area: Approximately 260 cubic yards of material, with a maximum depth of 3 feet bgs.
  - East Cleanup Action Area: Approximately 740 cubic yards of material, with a maximum depth of 5 feet bgs.

- Remedial excavations would be backfilled with clean material (soil and gravel). Excavated soil would be characterized prior to disposal offsite.

All excavated soil would be disposed of offsite at an appropriate landfill. It is assumed that all excavated material would be disposed of as nonhazardous waste. Dewatering within the excavations is not anticipated. The excavation would be backfilled with clean imported material.

Cost—The estimated probable cost for Option 3 is $1,363,000 (-30/+50%).

3.2 Evaluation of Cleanup Options

Criteria used to evaluate cleanup options are defined in the MTCA regulation (WAC 173-340-360). These criteria are as follows:

- Threshold requirements:
  - Protect human health and the environment
  - Comply with cleanup standards (WAC 173-340-700 through 173-340-760)
  - Comply with applicable state and federal laws (WAC 173-340-710)
  - Provide for compliance monitoring (WAC 173-340-410 and 173-340-720 through 173-340-760)
- Other requirements:
  - Use permanent solutions to the maximum extent practicable
  - Provide for a reasonable restoration timeframe
  - Consider public concerns (WAC 173-340-600)

Regarding the threshold requirements, all cleanup options:

- Protect human health and the environment
- Are expected to comply with the cleanup standards
- Include compliance monitoring
- Would be designed to comply with applicable state and federal laws

With regard to other requirements:

- Option 3 is the most permanent solution to the maximum extent practicable. It possesses long-term effectiveness with an implementable timeline.
- Option 2 is a moderately permanent solution to the maximum extent practicable.
- All cleanup options have a reasonable restoration timeframe.
- The approximate overall cleanup costs are as follows: Option 1—$30,000; Option 2—$250,700; Option 3—$1,363,000.
- All cleanup options would consider public concerns. Public concerns are collected and addressed during the regulatory cleanup process through opportunities to review and comment on cleanup documents.

4 Description of Selected Remedy

4.1 Site Description

During the FEI, MFA identified localized areas of lead and heavy oils detections above their respective MTCA Method A CULs in shallow soil in the bus parking area (MFA 2024). The exceedances were located far from the maintenance building, oil-water separator, and former fueling operations. Additionally, benzene was detected above its MTCA Method A CUL in soil at B07, near the bus wash. No detections of COIs in groundwater exceeded screening criteria at the Property.

4.2 Description of the Proposed Cleanup Action

Based on the preliminary evaluation of cleanup options and MFA's understanding of the plans for the Property, Option 2 would likely be selected by the District for implementation. Option 2 uses a combination of selective excavation, engineering, and institutional controls to prevent exposure to contaminated soil. Option 2 is protective of human and ecological receptors, moderately permanent, and cost-effective. Additionally, MFA understands that the Property may be redeveloped in the future. Components of redevelopment, such as hardscaping and/or buildings, may act as additional caps for remaining contamination left in place following the limited excavation.

As previously stated in Section 3.1.2, Option 2 includes the following actions:

- Supplemental Environmental Investigation—Conduct additional sampling around shallow exceedances to further characterize the horizontal extent of soil impacts and inform identification of highest exceedances for planned excavation areas.
- Limited Excavation and Capping—Excavation of shallow soil in targeted areas (up to ~3 feet bgs and 160 bank cubic yards) to remove the highest exceedances (see limited cleanup action areas on Figure 3-1). Remedial excavations would be lined with demarcation fabric before being backfilled with clean material (soil and gravel), which would act as a permeable cap for deeper exceedances. Excavated soil would be characterized prior to disposal offsite.
- Institutional Controls—Some concentrations of COIs above applicable CULs would remain in soil on the Property. Institutional controls would be implemented to establish administrative protections to document site conditions and prevent exposure. Institutional controls would include an environmental covenant preventing the disturbance of soil on the Property and a site management plan outlining procedures for conducting cap inspections and repairs.

All excavated soil would be disposed of offsite at an appropriate landfill. It is assumed that all excavated material would be disposed of as nonhazardous waste. Dewatering within the excavation is not anticipated.

4.3 Cleanup Standards and Point of Compliance

Proposed cleanup standards for soil are described in Section 2.3.2. The soil point of compliance (POC) is the depth at which CULs shall be attained. The standard POC in soil for human direct contact is 15 feet bgs throughout the entire site. This standard POC is applied to soil on the Property.

4.4 Applicable, Relevant, and Appropriate Requirements

In addition to CULs and POCs, cleanup standards must also incorporate other state and federal regulatory requirements applicable to the cleanup action and/or its location, as appropriate. This section identifies applicable or relevant and appropriate requirements (ARARs) for implementing the remedial action for the Site. The ARARs focus on federal or state statutes, regulations, criteria, and guidelines. The specific types of ARARs for the preferred remediation alternative include contaminant-, location-, and action-specific ARARs, which are summarized in Table 4-1.

4.5 Restoration Timeframe

Shortly after the limited excavation activities, soil removal areas would be backfilled and restored to match the surrounding area. For areas where residual contamination remains at depth, remedial excavations would be lined with demarcation fabric before being backfilled with clean material (soil and gravel), which would act as a permeable cap for deeper exceedances.

The proposed alternative would provide a reasonable restoration time frame to mitigate direct-contact exposure risk to receptors. However, some contaminated soil may remain beneath permeable caps. The work could be completed within one construction season.

4.6 Compliance Monitoring

Compliance monitoring would be implemented in accordance with WAC 173-340-410 and includes:

- Protection Monitoring to confirm that human health and the environment are adequately protected during the construction period of the cleanup action
- Performance Monitoring to confirm that the cleanup action has attained cleanup standards and other performance standards
- Confirmation Monitoring to confirm the long-term effectiveness of the cleanup action once performance standards have been obtained

Protection monitoring elements, including dust monitoring during excavation, would be addressed in the health and safety plan that would be developed for the project.

Performance monitoring following soil excavation would begin with topographic surveys or similar grade control measures to verify that the excavation has achieved the desired cut elevation. Soil samples would be collected and analyzed from the base and walls of the excavation to confirm that target CULs have been achieved, or to document the concentration of chemicals that remain on the Property. Related monitoring and documentation would include verifying the chemical quality of imported soil used for backfilling, placement to match pre-existing grade, and nominal compaction requirements to be established during the design phase.

Confirmation monitoring is a component of compliance monitoring that is intended to demonstrate the long-term effectiveness of the cleanup action once the CUL or other performance standards have been attained. Specific details for post-construction monitoring, which would include recommendations for cap monitoring, would be developed in a compliance monitoring plan after preparing project plans and specifications in the design phase, which would conform to the general requirements of WAC 173-340-410.

4.7 Schedule for Implementation

An implementation schedule is not determined at this time. The District currently plans to continue using the Property as a bus garage for the next 10 years. This draft CAP was prepared to provide the District a description of proposed cleanup actions to be implemented in anticipation of the future redevelopment and/or transaction of the Property.

Estimated costs should be further refined in the remedial design stage of the cleanup action. Cleanup action implementation should be further developed in project design documents. The detailed design phase to develop the project plans and specifications would be performed after the District engages Ecology to obtain an informal opinion on the CAP.

4.8 Institutional/Engineering Controls

As described in the MTCA regulations (WAC 173-340-440), institutional controls are intended to limit or prohibit activities that may interfere with the integrity of a cleanup action that would result in risk of exposure to contaminated soil at the site. These institutional controls may include on-site features (such as fences), educational programs (such as signage and public notices), legal mechanisms (such as land use restrictions, restrictive covenant, zoning designations, and building permit requirements), maintenance requirements for engineered controls (e.g., containment caps), and financial assurances.

Contaminated soil may remain contained in portions of the Property. Because impacts may be left in place, it is assumed that an environmental covenant and other institutional controls would be required under this remedy and would be initiated following the implementation of the cleanup action.

4.9 Public Participation

This draft CAP has been prepared for the District as a preliminary cleanup planning document. Any remedial actions would likely be performed as independent cleanup actions. Elements of this CAP may be reviewed with Ecology prior to implementation via the voluntary cleanup program. Therefore, the WAC requirement (173-340-600) for public review and comment on the cleanup options report and this draft CAP is not anticipated to apply.

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Limitations

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

Figures

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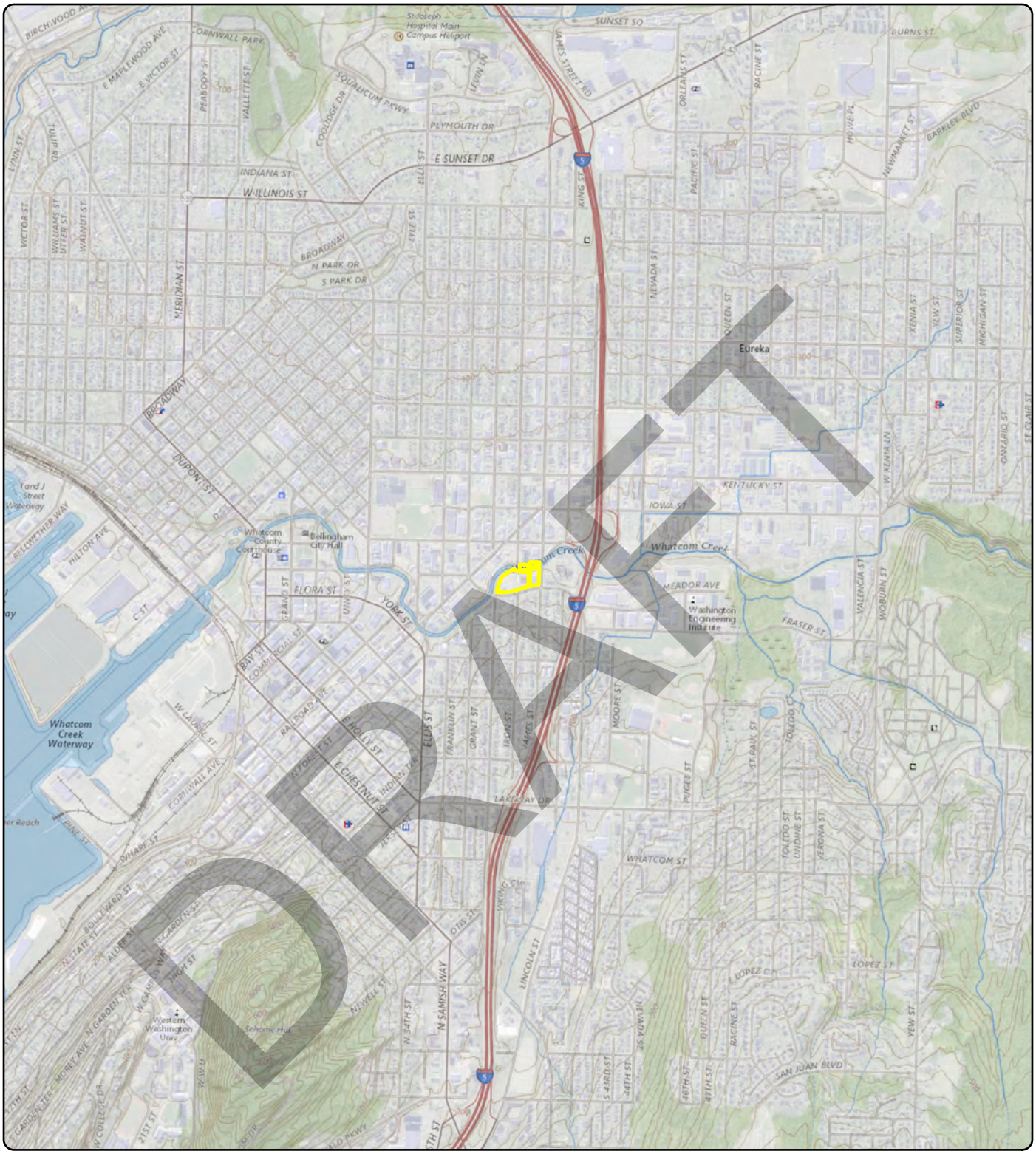

Notes
U.S. Geological Survey 7.5-minute topographic quadrangle (2020): Bellingham North.
Township 38 north, range 3 east, section 30.

Data Source
Property boundary obtained from Whatcom County.

Legend

Property Boundary

Figure 1-1
Property Location

Bellingham School District Bus Garage
Bellingham, Washington

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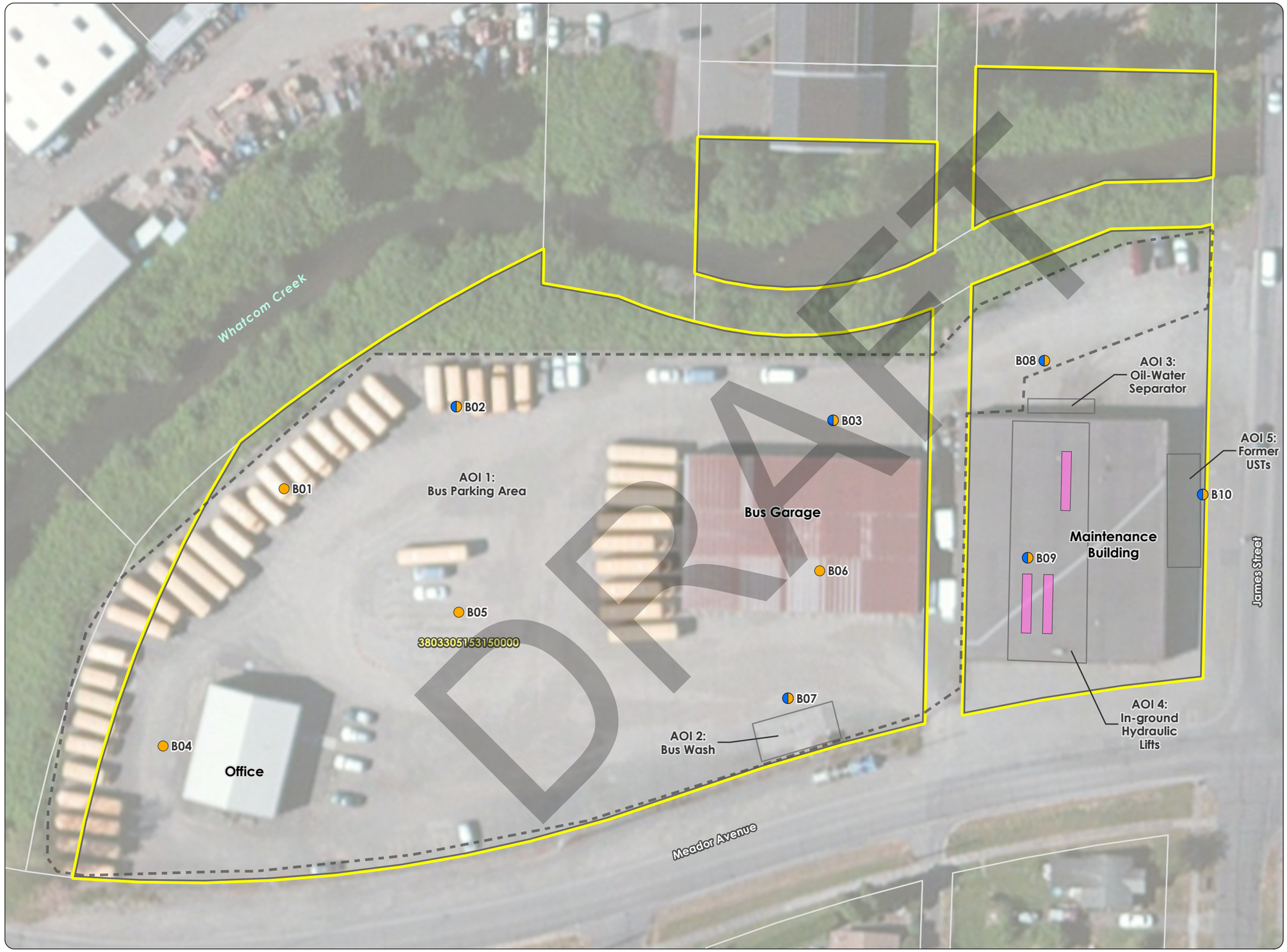

Figure 1-2
Sampling Locations

Bellingham School District
Bus Garage
Bellingham, WA

Legend

- Soil
- Soil and Groundwater
- Gravel Area
- In-ground Hydraulic Lift
- AOI
- Property Boundary
- Tax lot

Notes
All features are approximate.
AOI = area of interest.
UST = underground storage tank.

0 40
Feet

Data Sources
Aerial photograph obtained Esri; tax lot data obtained from Whatcom County. Utilities obtained from Port of Bellingham.

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Figure 2-1
Property Features

Bellingham School District
Bus Garage
Bellingham, Washington

Legend

- Tax lot
- Property Boundary
- Former USTs
- Gravel Area
- Hydraulic Lifts
- Bus Wash Area
- Oil-Water Separator System
- Electric Line
- Sewer Line
- Storm Line
- Water Line

Note
All features are approximate.
UST = underground storage tank.

0 50 100
Feet

Data Sources
Aerial photograph obtained from Esri;
tax lot data obtained from Whatcom County;
utilities obtained from Port of Bellingham.

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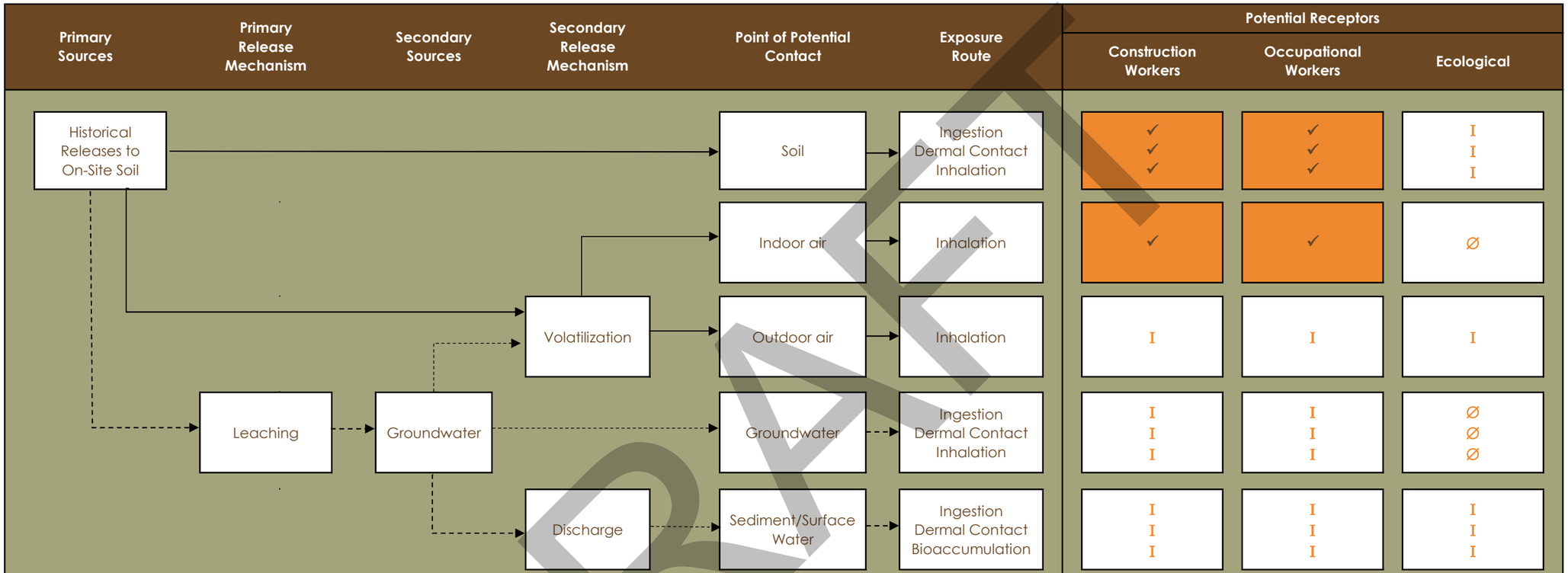
Reviewed By: cjoles
Produced By: abixby
Project: M0837.02.005

Figure 2-2
Updated Preliminary Conceptual Site Model
Bellingham School District Bus Garage



Notes

→ Primary pathway.

- - → Potential pathway.

✓ Potentially complete exposure route.

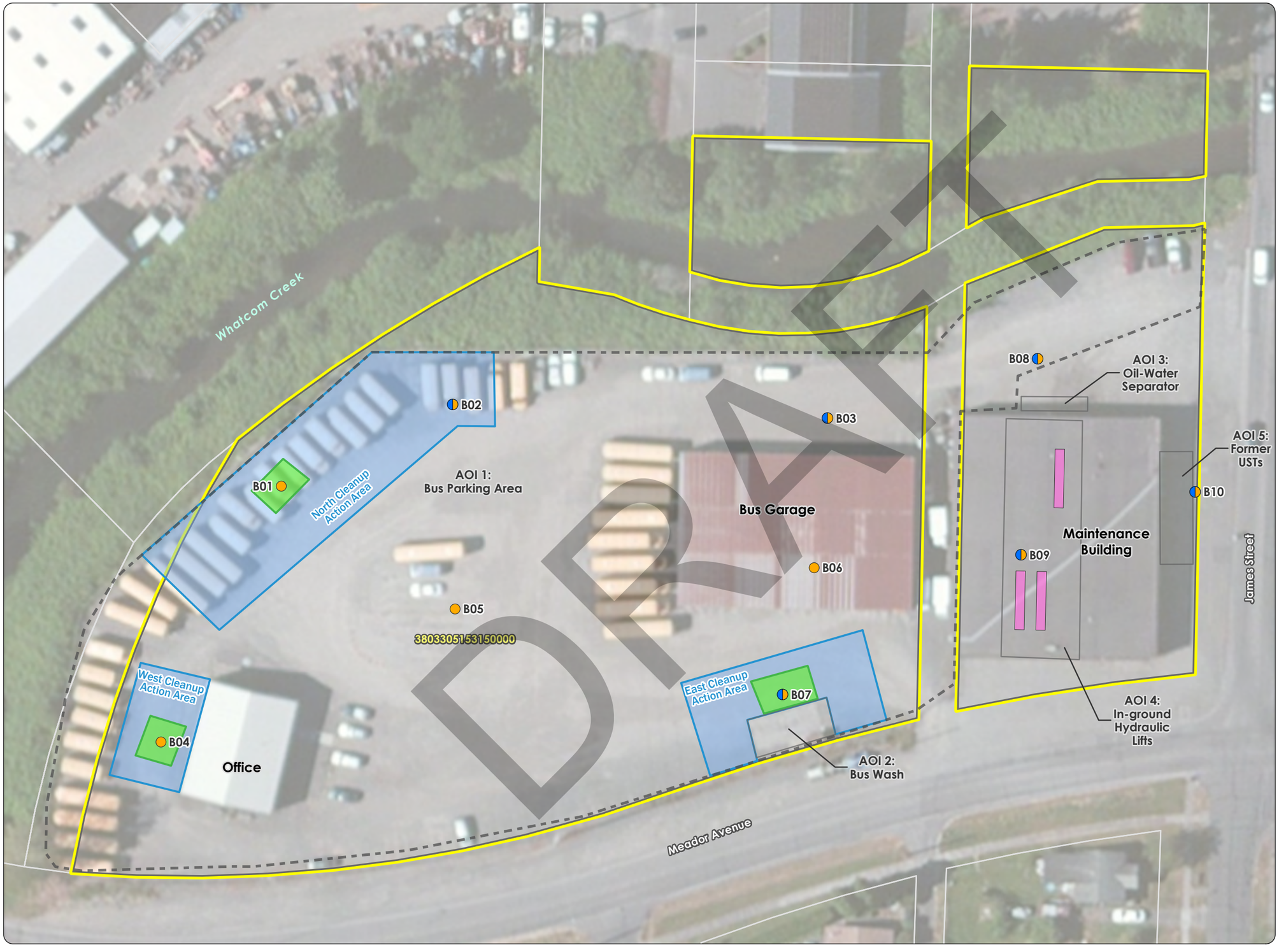
∅ Potentially incomplete exposure route.

I Potentially insignificant exposure route.

M0837.02.005, 6/30/2025, Fig 2-2 CSM

Figure 3-1
Cleanup Action Areas

Bellingham School District
Bus Garage
Bellingham, WA



Legend

- Soil Sample
- Soil and Groundwater Sample
- Gravel Area
- In-ground Hydraulic Lift
- AOI
- Cleanup Action Area
- Limited Cleanup Action Area
- Property Boundary
- Tax lot

Notes
All features are approximate.
AOI = area of interest.
UST = underground storage tank.

0 40
Feet

Data Sources
Aerial photograph obtained Esri; tax lot data obtained from Whatcom County.

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Print Date: 1/17/2025
Reviewed By: abixby
Produced By: stumer
Project: M0837.02.005

Tables

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Table 2-1
Summary of Soil Analytical Results
Bellingham School District Bus Garage

Location:	MTCA Method A, Unrestricted Land Use[a][1]	MTCA Method B[a][b][1]	MTCA, Soil, Protective of Groundwater to Surface Water[1]	Background Metals Concentrations[2]	B01		B02	B03	B04		B05
Sample Name:					B01-S-1.5	B01-S-6.5	B02-S-3.0	B03-S-2.5	B04-S-1.0	B04-S-7.0	B05-S-1.7
Collection Date:					10/12/2023	10/12/2023	10/11/2023	10/12/2023	10/12/2023	10/12/2023	10/12/2023
Collection Depth (ft bgs):			Vadose at 13°C, Freshwater	Puget Sound	1.5	6.5	3.0	2.5	1.0	7.0	1.7
TPH (mg/kg)											
Diesel-range hydrocarbons	2,000	NV	NV	NV	240	--	390	50 U	410	50 U	56
Motor-oil-range hydrocarbons	2,000	NV	NV	NV	1,600	--	250 U	1,200	2,000	250 U	430
Diesel+Oil[c]	2,000	NV	NV	NV	1,800	--	520	1,200	2,400	250 U	490
Total Metals (mg/kg)											
Cadmium	2	NA	NA	1	1.64	--	1 U	1 U	1 U	--	1 U
Copper	NV	3,200	**4.9**	36	**36.6**	--	**51.9**	**40.3**	17.2	--	19.4
Lead	250	NV	NA	24	3,000	491	55.3	173	76.3	--	80.3
Mercury	2	NV	NA	0.07	0.11	--	0.22	0.11	0.11	--	0.1 U
Zinc	NV	24,000	**120**	85	97.8	--	**146**	73.0	41.3	--	37.8
VOCs (mg/kg)											
1,1,1,2-Tetrachloroethane	NV	38	NV	NV	--	--	--	--	--	--	--
1,1,1-Trichloroethane	2	NA	NA	NV	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	NV	5	0.00056	NV	--	--	--	--	--	--	--
1,1,2-Trichloroethane	NV	18	0.0019	NV	--	--	--	--	--	--	--
1,1-Dichloroethane	NV	180	NV	NV	--	--	--	--	--	--	--
1,1-Dichloroethene	NV	4,000	2	NV	--	--	--	--	--	--	--
1,1-Dichloropropene	NV	NV	NV	NV	--	--	--	--	--	--	--
1,2,3-Trichlorobenzene	NV	64	NV	NV	--	--	--	--	--	--	--
1,2,3-Trichloropropane	NV	0.0063	NV	NV	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	NV	34	0.0013	NV	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	NV	800	NV	NV	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	NV	0.23	NV	NV	--	--	--	--	--	--	--
1,2-Dibromoethane	0.005	NA	NA	NV	--	--	--	--	--	--	--
1,2-Dichlorobenzene	NV	7,200	8.2	NV	--	--	--	--	--	--	--
1,2-Dichloroethane	NV	11	0.043	NV	--	--	--	--	--	--	--
1,2-Dichloropropane	NV	27	0.0036	NV	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	NV	800	NV	NV	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	0.023	NV	--	--	--	--	--	--	--
1,3-Dichloropropane	NV	1,600	NV	NV	--	--	--	--	--	--	--
1,4-Dichlorobenzene	NV	190	3.3	NV	--	--	--	--	--	--	--
2,2-Dichloropropane	NV	NV	NV	NV	--	--	--	--	--	--	--
2-Butanone	NV	48,000	NV	NV	--	--	--	--	--	--	--
2-Chlorotoluene	NV	1,600	NV	NV	--	--	--	--	--	--	--
2-Hexanone	NV	400	NV	NV	--	--	--	--	--	--	--
4-Chlorotoluene	NV	1,600	NV	NV	--	--	--	--	--	--	--

Table 2-1
Summary of Soil Analytical Results
Bellingham School District Bus Garage

Location:	MTCA Method A, Unrestricted Land Use[a][1]	MTCA Method B[a][b][1]	MTCA, Soil, Protective of Groundwater to Surface Water[1]	Background Metals Concentrations[2]	B01		B02	B03	B04		B05
Sample Name:					B01-S-1.5	B01-S-6.5	B02-S-3.0	B03-S-2.5	B04-S-1.0	B04-S-7.0	B05-S-1.7
Collection Date:					10/12/2023	10/12/2023	10/11/2023	10/12/2023	10/12/2023	10/12/2023	10/12/2023
Collection Depth (ft bgs):			Vadose at 13°C, Freshwater	Puget Sound	1.5	6.5	3.0	2.5	1.0	7.0	1.7
VOCs (mg/kg) cont.											
4-Isopropyltoluene	NV	NV	NV	NV	--	--	--	--	--	--	--
4-Methyl-2-pentanone	NV	6,400	NV	NV	--	--	--	--	--	--	--
Acetone	NV	72,000	NV	NV	--	--	--	--	--	--	--
Benzene	0.03	NA	NA	NV	--	--	--	--	--	--	--
Bromobenzene	NV	640	NV	NV	--	--	--	--	--	--	--
Bromodichloromethane	NV	16	0.0034	NV	--	--	--	--	--	--	--
Bromoform	NV	130	0.03	NV	--	--	--	--	--	--	--
Bromomethane	NV	110	0.45	NV	--	--	--	--	--	--	--
Carbon tetrachloride	NV	14	0.0016	NV	--	--	--	--	--	--	--
Chlorobenzene	NV	1,600	0.86	NV	--	--	--	--	--	--	--
Chloroethane	NV	NV	NV	NV	--	--	--	--	--	--	--
Chloroform	NV	32	0.31	NV	--	--	--	--	--	--	--
Chloromethane	NV	NV	NV	NV	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	NV	160	NV	NV	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	NV	NV	NV	NV	--	--	--	--	--	--	--
Dibromochloromethane	NV	12	0.0028	NV	--	--	--	--	--	--	--
Dibromomethane	NV	800	NV	NV	--	--	--	--	--	--	--
Dichlorodifluoromethane (Freon 12)	NV	16,000	NV	NV	--	--	--	--	--	--	--
Ethylbenzene	6	NA	NA	NV	--	--	--	--	--	--	--
Hexachlorobutadiene	NV	13	0.00021	NV	--	--	--	--	--	--	--
Isopropylbenzene	NV	8,000	NV	NV	--	--	--	--	--	--	--
m,p-Xylene	NV	NV	NV	NV	--	--	--	--	--	--	--
Methyl tert-butyl ether	0.1	NA	NA	NV	--	--	--	--	--	--	--
Methylene chloride	0.02	NA	NA	NV	--	--	--	--	--	--	--
Naphthalene	5	NA	NA	NV	--	--	--	--	--	--	--
n-Hexane	NV	4,800	NV	NV	--	--	--	--	--	--	--
n-Propylbenzene	NV	8,000	NV	NV	--	--	--	--	--	--	--
o-Xylene	NV	16,000	NV	NV	--	--	--	--	--	--	--
sec-Butylbenzene	NV	8,000	NV	NV	--	--	--	--	--	--	--
Styrene	NV	16,000	NV	NV	--	--	--	--	--	--	--
tert-Butylbenzene	NV	8,000	NV	NV	--	--	--	--	--	--	--
Tetrachloroethene	0.05	NA	NA	NV	--	--	--	--	--	--	--
Toluene	7	NA	NA	NV	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	NV	1,600	0.52	NV	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	NV	NV	NV	NV	--	--	--	--	--	--	--

Table 2-1
Summary of Soil Analytical Results
Bellingham School District Bus Garage

Location:	MTCA Method A, Unrestricted Land Use[a][1]	MTCA Method B[a][b][1]	MTCA, Soil, Protective of Groundwater to Surface Water[1]	Background Metals Concentrations[2]	B01		B02	B03	B04		B05
Sample Name:					B01-S-1.5	B01-S-6.5	B02-S-3.0	B03-S-2.5	B04-S-1.0	B04-S-7.0	B05-S-1.7
Collection Date:					10/12/2023	10/12/2023	10/11/2023	10/12/2023	10/12/2023	10/12/2023	10/12/2023
Collection Depth (ft bgs):			Vadose at 13°C, Freshwater	Puget Sound	1.5	6.5	3.0	2.5	1.0	7.0	1.7
VOCs (mg/kg) cont.											
Trichloroethene	0.03	NA	NA	NV	--	--	--	--	--	--	--
Trichlorofluoromethane (Freon 11)	NV	24,000	NV	NV	--	--	--	--	--	--	--
Vinyl chloride	NV	0.67	0.00012	NV	--	--	--	--	--	--	--
Xylenes, total[d]	9	NA	NA	NV	--	--	--	--	--	--	--
PAHs (mg/kg)											
1-Methylnaphthalene	NV	34	NV	NV	--	--	--	--	2.1	0.01 U	--
2-Methylnaphthalene	NV	320	NV	NV	--	--	--	--	0.1	0.01 U	--
Acenaphthene	NV	4,800	3.1	NV	--	--	--	--	0.1 U	0.01 U	--
Acenaphthylene	NV	NV	NV	NV	--	--	--	--	0.1 U	0.01 U	--
Anthracene	NV	24,000	47	NV	--	--	--	--	0.1 U	0.01 U	--
Benzo(a)anthracene	NV	NV	NV	NV	--	--	--	--	0.026 J	0.01 U	--
Benzo(a)pyrene	0.19[e][3]	NA	NA	NV	--	--	--	--	0.075 J	0.01 U	--
Benzo(b)fluoranthene	NV	NV	NV	NV	--	--	--	--	0.10 J	0.01 U	--
Benzo(ghi)perylene	NV	NV	NV	NV	--	--	--	--	0.13 J	0.01 U	--
Benzo(k)fluoranthene	NV	NV	NV	NV	--	--	--	--	0.1 UJ	0.01 U	--
Chrysene	NV	NV	NV	NV	--	--	--	--	0.21	0.01 U	--
Dibenzo(a,h)anthracene	NV	NV	NV	NV	--	--	--	--	0.057 J	0.01 U	--
Fluoranthene	NV	3,200	5.9	NV	--	--	--	--	0.057 J	0.01 U	--
Fluorene	NV	3,200	1.6	NV	--	--	--	--	0.21	0.01 U	--
Indeno(1,2,3-cd)pyrene	NV	NV	NV	NV	--	--	--	--	0.033 J	0.01 U	--
Naphthalene	5	NA	NA	NV	--	--	--	--	0.1 U	0.01 U	--
Phenanthrene	NV	NV	NV	NV	--	--	--	--	0.15	0.01 U	--
Pyrene	NV	2,400	11	NV	--	--	--	--	0.25	0.01 U	--
Naphthalenes, total[f]	5	NA	NA	NV	--	--	--	--	2.3	0.01 U	--
cPAH TEQ[g][4]	0.19[e][3]	NA	NA	NV	--	--	--	--	0.10 J	0.01 U	--

Table 2-1
Summary of Soil Analytical Results
Bellingham School District Bus Garage

Location:	MTCA Method A, Unrestricted Land Use[a][1]	MTCA Method B[a][b][1]	MTCA, Soil, Protective of Groundwater to Surface Water[1]	Background Metals Concentrations[2]	B06	B07		B08	B09	B10	
Sample Name:					B06-S-1.0	B07-S-2.0	B07-S-6.0	B08-S-3.0	B09-S-3.0	B10-S-2.5	BDUP-S-2.5
Collection Date:					10/12/2023	10/12/2023	10/12/2023	10/11/2023	10/11/2023	10/12/2023	10/12/2023
Collection Depth (ft bgs):			Vadose at 13°C, Freshwater	Puget Sound	1.0	2.0	6.0	3.0	3.0	2.5	2.5
TPH (mg/kg)											
Diesel-range hydrocarbons	2,000	NV	NV	NV	50 U	50 U	--	50 U	50 U	50 U	50 U
Motor-oil-range hydrocarbons	2,000	NV	NV	NV	280	250 U	--	250 U	250 U	440	250 U
Diesel+Oil[c]	2,000	NV	NV	NV	310	250 U	--	250 U	250 U	470	250 U
Total Metals (mg/kg)											
Cadmium	2	NA	NA	1	1 U	1.62	--	1 U	1 U	--	--
Copper	NV	3,200	**4.9**	36	21.6	**60.8**	--	26.5	26.7	--	--
Lead	250	NV	NA	24	11.3	377	8.17	71.4	9.67	--	--
Mercury	2	NV	NA	0.07	0.1 U	0.26	--	0.1 U	0.1 U	--	--
Zinc	NV	24,000	**120**	85	57.4	**616**	--	58.4	48.5 J	--	--
VOCs (mg/kg)											
1,1,1,2-Tetrachloroethane	NV	38	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
1,1,1-Trichloroethane	2	NA	NA	NV	--	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U
1,1,2,2-Tetrachloroethane	NV	5	0.00056	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
1,1,2-Trichloroethane	NV	18	0.0019	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
1,1-Dichloroethane	NV	180	NV	NV	--	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U
1,1-Dichloroethene	NV	4,000	2	NV	--	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U
1,1-Dichloropropene	NV	NV	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
1,2,3-Trichlorobenzene	NV	64	NV	NV	--	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U
1,2,3-Trichloropropane	NV	0.0063	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
1,2,4-Trichlorobenzene	NV	34	0.0013	NV	--	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U
1,2,4-Trimethylbenzene	NV	800	NV	NV	--	0.13	--	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane	NV	0.23	NV	NV	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.005	NA	NA	NV	--	0.005 U	--	0.005 U	0.005 U	0.005 U	0.005 U
1,2-Dichlorobenzene	NV	7,200	8.2	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
1,2-Dichloroethane	NV	11	0.043	NV	--	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U
1,2-Dichloropropane	NV	27	0.0036	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
1,3,5-Trimethylbenzene	NV	800	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichlorobenzene	NV	NV	0.023	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
1,3-Dichloropropane	NV	1,600	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
1,4-Dichlorobenzene	NV	190	3.3	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
2,2-Dichloropropane	NV	NV	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
2-Butanone	NV	48,000	NV	NV	--	1 U	--	1 U	1 U	1 U	1 U
2-Chlorotoluene	NV	1,600	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
2-Hexanone	NV	400	NV	NV	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
4-Chlorotoluene	NV	1,600	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U

Table 2-1
Summary of Soil Analytical Results
Bellingham School District Bus Garage

Location:	MTCA Method A, Unrestricted Land Use[a][1]	MTCA Method B[a][b][1]	MTCA, Soil, Protective of Groundwater to Surface Water[1]	Background Metals Concentrations[2]	B06	B07		B08	B09	B10	
Sample Name:					B06-S-1.0	B07-S-2.0	B07-S-6.0	B08-S-3.0	B09-S-3.0	B10-S-2.5	BDUP-S-2.5
Collection Date:					10/12/2023	10/12/2023	10/12/2023	10/11/2023	10/11/2023	10/12/2023	10/12/2023
Collection Depth (ft bgs):			Vadose at 13°C, Freshwater	Puget Sound	1.0	2.0	6.0	3.0	3.0	2.5	2.5
VOCs (mg/kg) cont.											
4-Isopropyltoluene	NV	NV	NV	NV	--	0.055	--	0.05 U	0.05 U	0.05 U	0.05 U
4-Methyl-2-pentanone	NV	6,400	NV	NV	--	1 U	--	1 U	1 U	1 U	1 U
Acetone	NV	72,000	NV	NV	--	5 UJ	--	5 UJ	5 UJ	5 UJ	5 UJ
Benzene	0.03	NA	NA	NV	--	0.044	--	0.001 U	0.001 U	0.001 U	0.0019
Bromobenzene	NV	640	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
Bromodichloromethane	NV	16	0.0034	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
Bromoform	NV	130	0.03	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
Bromomethane	NV	110	0.45	NV	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
Carbon tetrachloride	NV	14	0.0016	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
Chlorobenzene	NV	1,600	0.86	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
Chloroethane	NV	NV	NV	NV	--	0.1 U	--	0.1 U	0.1 U	0.1 U	0.1 U
Chloroform	NV	32	0.31	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
Chloromethane	NV	NV	NV	NV	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	NV	160	NV	NV	--	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U
cis-1,3-Dichloropropene	NV	NV	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
Dibromochloromethane	NV	12	0.0028	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
Dibromomethane	NV	800	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
Dichlorodifluoromethane (Freon 12)	NV	16,000	NV	NV	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	6	NA	NA	NV	--	0.20	--	0.0045	0.001 U	0.0017	0.0037
Hexachlorobutadiene	NV	13	0.00021	NV	--	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U
Isopropylbenzene	NV	8,000	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
m,p-Xylene	NV	NV	NV	NV	--	0.47	--	0.019	0.002 U	0.0061 J	0.022 J
Methyl tert-butyl ether	0.1	NA	NA	NV	--	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U
Methylene chloride	0.02	NA	NA	NV	--	0.2 U	--	0.2 U	0.2 U	0.2 U	0.2 U
Naphthalene	5	NA	NA	NV	--	0.24	--	0.014	0.01 U	0.01 U	0.013
n-Hexane	NV	4,800	NV	NV	--	0.25 U	--	0.25 U	0.25 U	0.25 U	0.25 U
n-Propylbenzene	NV	8,000	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
o-Xylene	NV	16,000	NV	NV	--	0.20	--	0.0083	0.001 U	0.0027 J	0.014 J
sec-Butylbenzene	NV	8,000	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
Styrene	NV	16,000	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
tert-Butylbenzene	NV	8,000	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U
Tetrachloroethene	0.05	NA	NA	NV	--	0.002 U	--	0.002 U	0.002 U	0.0026	0.0028
Toluene	7	NA	NA	NV	--	0.94	--	0.0075	0.001 U	0.0088	0.0084
trans-1,2-Dichloroethene	NV	1,600	0.52	NV	--	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U
trans-1,3-Dichloropropene	NV	NV	NV	NV	--	0.05 U	--	0.05 U	0.05 U	0.05 U	0.05 U

Table 2-1
Summary of Soil Analytical Results
Bellingham School District Bus Garage

Location:	MTCA Method A, Unrestricted Land Use[a][1]	MTCA Method B[a][b][1]	MTCA, Soil, Protective of Groundwater to Surface Water[1]	Background Metals Concentrations[2]	B06	B07		B08	B09	B10	
Sample Name:					B06-S-1.0	B07-S-2.0	B07-S-6.0	B08-S-3.0	B09-S-3.0	B10-S-2.5	BDUP-S-2.5
Collection Date:					10/12/2023	10/12/2023	10/12/2023	10/11/2023	10/11/2023	10/12/2023	10/12/2023
Collection Depth (ft bgs):			Vadose at 13°C, Freshwater	Puget Sound	1.0	2.0	6.0	3.0	3.0	2.5	2.5
VOCs (mg/kg) cont.											
Trichloroethene	0.03	NA	NA	NV	--	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U
Trichlorofluoromethane (Freon 11)	NV	24,000	NV	NV	--	0.5 U	--	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	NV	0.67	0.00012	NV	--	0.002 U	--	0.002 U	0.002 U	0.002 U	0.002 U
Xylenes, total[d]	9	NA	NA	NV	--	0.67	--	0.027	0.002 U	0.0088 J	0.036 J
PAHs (mg/kg)											
1-Methylnaphthalene	NV	34	NV	NV	--	0.05 U	0.01 U	0.026	0.05 U	--	--
2-Methylnaphthalene	NV	320	NV	NV	--	0.05 U	0.01 U	0.032	0.05 U	--	--
Acenaphthene	NV	4,800	3.1	NV	--	0.05 U	0.01 U	0.019	0.05 U	--	--
Acenaphthylene	NV	NV	NV	NV	--	0.05 U	0.01 U	0.025	0.05 U	--	--
Anthracene	NV	24,000	47	NV	--	0.05 U	0.01 U	0.01 U	0.05 U	--	--
Benzo(a)anthracene	NV	NV	NV	NV	--	0.28	0.01 U	0.014	0.05 U	--	--
Benzo(a)pyrene	0.19[e][3]	NA	NA	NV	--	0.47	0.01 U	0.020 J	0.05 U	--	--
Benzo(b)fluoranthene	NV	NV	NV	NV	--	0.42	0.01 U	0.041 J	0.05 U	--	--
Benzo(ghi)perylene	NV	NV	NV	NV	--	0.082	0.01 U	0.011 J	0.05 U	--	--
Benzo(k)fluoranthene	NV	NV	NV	NV	--	0.16	0.01 U	0.015 J	0.05 U	--	--
Chrysene	NV	NV	NV	NV	--	0.33	0.01 U	0.021	0.05 U	--	--
Dibenzo(a,h)anthracene	NV	NV	NV	NV	--	0.05 U	0.01 U	0.01 UJ	0.05 U	--	--
Fluoranthene	NV	3,200	5.9	NV	--	0.26	0.01 U	0.041	0.05 U	--	--
Fluorene	NV	3,200	1.6	NV	--	0.05 U	0.01 U	0.014	0.05 U	--	--
Indeno(1,2,3-cd)pyrene	NV	NV	NV	NV	--	0.099	0.01 U	0.01 UJ	0.05 U	--	--
Naphthalene	5	NA	NA	NV	--	0.073	0.01 U	0.047	0.05 U	--	--
Phenanthrene	NV	NV	NV	NV	--	0.11	0.01 U	0.035	0.05 U	--	--
Pyrene	NV	2,400	11	NV	--	0.46	0.01 U	0.046	0.05 U	--	--
Naphthalenes, total[f]	5	NA	NA	NV	--	0.12	0.01 U	0.11	0.05 U	--	--
cPAH TEQ[g][4]	0.19[e][3]	NA	NA	NV	--	0.57	0.01 U	0.028 J	0.05 U	--	--

Table 2-1
Summary of Soil Analytical Results
Bellingham School District Bus Garage

Notes

Background metals concentrations for Puget Sound are shown for reference.

Shading/bolding (key below) indicates values that exceed screening criteria; non-detects (U and UJ) and detections below background metals concentrations were not compared with screening criteria.

MTCA Method A, Unrestricted Land Use

MTCA, Soil, Protective of Groundwater to Surface Water, Vadose at 13°C, Freshwater

-- = not analyzed.

°C = degrees Celsius.

cPAH = carcinogenic polycyclic aromatic hydrocarbon.

ft bgs = feet below ground surface.

J = result is estimated.

mg/kg = milligrams per kilogram.

MTCA = Model Toxics Control Act.

NA = not applicable.

NV = no value.

PAH = polycyclic aromatic hydrocarbon.

TPH = total petroleum hydrocarbons.

U = result is non-detect at the method reporting limit.

UJ = result is non-detect with an estimated method reporting limit.

VOC = volatile organic compound.

[a]When MTCA Method A value is available, value is not screened to MTCA Method B. When MTCA Method A value is not available, value is screened against the lower of MTCA Method B cancer and noncancer values as well as MTCA Protective of Groundwater to Surface Water values (where available).

[b]Lower of cancer and noncancer values are shown.

[c]Diesel+Oil is the sum of diesel- and motor-oil-range hydrocarbons. When results are non-detect, half the reporting limit is used. When both results are non-detect, the highest reporting limit is shown.

[d]Total xylenes is the sum of m,p-xylene and o-xylene. When both results are non-detect, the highest reporting limit is shown.

[e]MTCA Method A value for benzo(a)pyrene and cPAH TEQ is not applicable. Screening level shown is the MTCA B value.

[f]Total naphthalenes is the sum of 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene. When results are non-detect, half the reporting limit is used. When all results are non-detect, the highest reporting limit is shown.

[g]One-half the reporting limit is used for non-detect results in the cPAH TEQ calculation. When all cPAHs are non-detect, the highest reporting limit is used.

References

[1]Ecology. 2023. *Cleanup Levels and Risk Calculation (CLARC) table.* Washington State Department of Ecology, Toxics Cleanup Program. August.

[2]Ecology. 1994. *Natural Background Soil Metals Concentrations in Washington State.* Publication 94-115. Washington State Department of Ecology. October.

[3]Ecology. 2021. *Polycyclic Aromatic Hydrocarbons and Benzo[a]pyrene: Changes to MTCA Default Cleanup Levels for 2017.* Supporting material for Cleanup Levels and Risk Calculation (CLARC). Washington State Department of Ecology, Toxics Cleanup Program. July.

[4]Ecology. 2015. *Implementation Memorandum #10: Evaluating the Human Health Toxicity of Carcinogenic PAHs (cPAHs) Using Toxicity Equivalency Factors (TEFs)* . Publication No. 15-09-049. Washington State Department of Ecology, Toxics Cleanup Program. April 20.

Table 2-2
Summary of Groundwater Analytical Results
Bellingham School District Bus Garage

Location:	MTCA Method A[a][1]	MTCA Method B[a][b][1]	B02	B03	B07	B08	B09	B10	
Sample Name:			B02-GW-22.5	B03-GW-21.5	B07-GW-18.0	B08-GW-22.5	B09-GW-21.0	B10-GW-15.0	BDUP-GW-15.0
Collection Date:			10/11/2023	10/12/2023	10/12/2023	10/11/2023	10/11/2023	10/12/2023	10/12/2023
Collection Depth (ft bgs):			22.5	21.5	18.0	22.5	21.0	15.0	15.0
TPH (ug/L)									
Diesel-range hydrocarbons	500	NV	50 U	50 U	50 U	64	170	210	200
Motor-oil-range hydrocarbons	500	NV	250 U	250 U	250 U	300 U	300 U	250 U	250 U
Diesel+Oil[c]	500	NV	250 U	250 U	250 U	210	320	340	330
VOCs (ug/L)									
1,1,1,2-Tetrachloroethane	NV	1.7	--	--	--	--	1 U	--	--
1,1,1-Trichloroethane	200	NA	--	--	--	--	1 U	--	--
1,1,2,2-Tetrachloroethane	NV	0.22	--	--	--	--	0.2 U	--	--
1,1,2-Trichloroethane	NV	0.77	--	--	--	--	0.5 U	--	--
1,1-Dichloroethane	NV	7.7	--	--	--	--	1 U	--	--
1,1-Dichloroethene	NV	400	--	--	--	--	1 U	--	--
1,1-Dichloropropene	NV	NV	--	--	--	--	1 U	--	--
1,2,3-Trichlorobenzene	NV	6.4	--	--	--	--	1 U	--	--
1,2,3-Trichloropropane	NV	0.00038	--	--	--	--	1 U	--	--
1,2,4-Trichlorobenzene	NV	1.5	--	--	--	--	1 U	--	--
1,2,4-Trimethylbenzene	NV	80	--	--	--	--	1 U	--	--
1,2-Dibromo-3-chloropropane	NV	0.014	--	--	--	--	10 U	--	--
1,2-Dibromoethane	0.01	NA	--	--	--	--	0.01 U	--	--
1,2-Dichlorobenzene	NV	720	--	--	--	--	1 U	--	--
1,2-Dichloroethane	5	NA	--	--	--	--	0.2 U	--	--
1,2-Dichloropropane	NV	1.2	--	--	--	--	1 U	--	--
1,3,5-Trimethylbenzene	NV	80	--	--	--	--	1 U	--	--
1,3-Dichlorobenzene	NV	NV	--	--	--	--	1 U	--	--
1,3-Dichloropropane	NV	160	--	--	--	--	1 U	--	--
1,4-Dichlorobenzene	NV	8.1	--	--	--	--	1 U	--	--
2,2-Dichloropropane	NV	NV	--	--	--	--	1 U	--	--
2-Butanone	NV	4,800	--	--	--	--	20 U	--	--
2-Chlorotoluene	NV	160	--	--	--	--	1 U	--	--
2-Hexanone	NV	40	--	--	--	--	10 U	--	--
4-Chlorotoluene	NV	160	--	--	--	--	1 U	--	--
4-Isopropyltoluene	NV	NV	--	--	--	--	1 U	--	--
4-Methyl-2-pentanone	NV	640	--	--	--	--	10 U	--	--
Acetone	NV	7,200	--	--	--	--	50 UJ	--	--
Benzene	5	NA	--	--	--	--	0.35 U	--	--
Bromobenzene	NV	64	--	--	--	--	1 U	--	--
Bromodichloromethane	NV	0.71	--	--	--	--	0.5 U	--	--
Bromoform	NV	5.5	--	--	--	--	5 U	--	--
Bromomethane	NV	11	--	--	--	--	5 U	--	--

Table 2-2
Summary of Groundwater Analytical Results
Bellingham School District Bus Garage

Location:	MTCA Method A[(a)(1)]	MTCA Method B[(a)(b)(1)]	B02	B03	B07	B08	B09	B10	
Sample Name:			B02-GW-22.5	B03-GW-21.5	B07-GW-18.0	B08-GW-22.5	B09-GW-21.0	B10-GW-15.0	BDUP-GW-15.0
Collection Date:			10/11/2023	10/12/2023	10/12/2023	10/11/2023	10/11/2023	10/12/2023	10/12/2023
Collection Depth (ft bgs):			22.5	21.5	18.0	22.5	21.0	15.0	15.0
VOCs (ug/L) cont.									
Carbon tetrachloride	NV	0.63	--	--	--	--	0.5 U	--	--
Chlorobenzene	NV	160	--	--	--	--	1 U	--	--
Chloroethane	NV	NV	--	--	--	--	1 U	--	--
Chloroform	NV	1.4	--	--	--	--	1 U	--	--
Chloromethane	NV	NV	--	--	--	--	10 U	--	--
cis-1,2-Dichloroethene	NV	16	--	--	--	--	1 U	--	--
cis-1,3-Dichloropropene	NV	NV	--	--	--	--	0.4 U	--	--
Dibromochloromethane	NV	0.52	--	--	--	--	0.5 U	--	--
Dibromomethane	NV	80	--	--	--	--	1 U	--	--
Dichlorodifluoromethane (Freon 12)	NV	1,600	--	--	--	--	1 U	--	--
Ethylbenzene	700	NA	--	--	--	--	1 U	--	--
Hexachlorobutadiene	NV	0.56	--	--	--	--	0.5 U	--	--
Isopropylbenzene	NV	800	--	--	--	--	1 U	--	--
m,p-Xylene	NV	NV	--	--	--	--	2 U	--	--
Methyl tert-butyl ether	20	NA	--	--	--	--	1 U	--	--
Methylene chloride	5	NA	--	--	--	--	5 U	--	--
Naphthalene	160	NA	--	--	--	--	1 U	--	--
n-Hexane	NV	480	--	--	--	--	5 U	--	--
n-Propylbenzene	NV	800	--	--	--	--	1 U	--	--
o-Xylene	NV	1,600	--	--	--	--	1 U	--	--
sec-Butylbenzene	NV	800	--	--	--	--	1 U	--	--
Styrene	NV	1,600	--	--	--	--	1 U	--	--
tert-Butylbenzene	NV	800	--	--	--	--	1 U	--	--
Tetrachloroethene	5	NA	--	--	--	--	1 U	--	--
Toluene	1,000	NA	--	--	--	--	1 U	--	--
trans-1,2-Dichloroethene	NV	160	--	--	--	--	1 U	--	--
trans-1,3-Dichloropropene	NV	NV	--	--	--	--	0.4 U	--	--
Trichloroethene	5	NA	--	--	--	--	0.5 U	--	--
Trichlorofluoromethane (Freon 11)	NV	2,400	--	--	--	--	1 U	--	--
Vinyl chloride	0.2	NA	--	--	--	--	0.023	--	--
Xylenes, total[(d)]	1,000	NA	--	--	--	--	2 U	--	--

Table 2-2
Summary of Groundwater Analytical Results
Bellingham School District Bus Garage

Notes

Detected results were compared with screening criteria. No exceedances were identified.

-- = not analyzed.

ft bgs = feet below ground surface.

MTCA = Model Toxics Control Act.

NA = not applicable.

NV = no value.

TPH = total petroleum hydrocarbons.

U = result is non-detect at the method reporting limit.

ug/L = micrograms per liter.

UJ = result is non-detect with an estimated method reporting limit.

VOC = volatile organic compound.

[a]When MTCA Method A value is available, value is not screened to MTCA Method B. When MTCA Method A value is not available, value is screened against the lower of MTCA Method B cancer and noncancer values.

[b]Lower of cancer and noncancer values are shown.

[c]Diesel+Oil is the sum of diesel- and motor-oil-range hydrocarbons. When results are non-detect, half the reporting limit is used. When both results are non-detect, the highest reporting limit is shown.

[d]Total xylenes is the sum of m,p-xylene and o-xylene. When both results are non-detect, the highest reporting limit is shown.

Reference

[1]Ecology. 2023. *Cleanup Levels and Risk Calculation (CLARC) table.* Washington State Department of Ecology, Toxics Cleanup Program. August.

Table 4-1
Applicable, Relevant, and Appropriate Requirements
Bellingham School District Bus Garage

Authority	Resource	Implementing Laws/Regulations	ARAR	Applicability
Contaminant-Specific ARARs				
State	Soil	Washington State MTCA (RCW 70.105D; Chapter 173-340 WAC)	Yes	MTCA soil cleanup levels are applicable.
Action-Specific ARARs				
Federal / State	Surface Water	Federal Water Pollution Control Act—NPDES CWA; 33 USC § 1342, Section 402) and Implementing Regulations Washington State Construction Stormwater General Permit (RCW 90.48)	Yes	The NPDES program establishes requirements for point source discharges, including stormwater runoff. These requirements would be applicable for any point source discharge of stormwater during construction or following cleanup.
Federal	Surface Water	Federal Water Pollution Control Act—Water Quality Certification (CWA; 33 USC § 1341, Section 401) and Implementing Regulations	No	Section 401 of the CWA provides that applicants for a permit to conduct any activity involving potential discharges into waters or wetlands shall obtain certification from the state that discharges will comply with applicable water quality standards. These activities are not expected for the proposed alternatives.
State	Surface Water	Hydraulic Code (RCW 77.55; Chapter 220-110 WAC)	No	The Hydraulic Code requires that any construction activity that uses, diverts, obstructs, or changes the bed or flow of state waters must be done under the terms of a Hydraulics Project Approval permit issued by the Washington State Department of Fish and Wildlife. These activities are not expected for the proposed alternatives.
Federal	Surface Water and Wetlands	Federal Water Pollution Control Act—Discharge of Dredge and Fill Materials (CWA; 33 USC § 1344, Section 404) and Implementing Regulations	No	Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill materials into the waters of the United States, including wetlands. These activities are not expected for the proposed alternatives.
Federal / State	Solid Waste	Transportation of Hazardous Materials (49 CFR Parts 105 to 177) (Chapter 446-50 WAC)	Yes	Transportation of hazardous waste or materials is required to meet state and federal requirements. This requirement is potentially applicable to alternatives that involve the off-site transport of impacted soil.

Table 4-1
Applicable, Relevant, and Appropriate Requirements
Bellingham School District Bus Garage

Authority	Resource	Implementing Laws/Regulations	ARAR	Applicability
Federal / State	Solid Waste	RCRA (42 USC § 6901 et seq.), Subtitle C—Hazardous Waste Management (40 CFR Parts 260 to 279) Dangerous Waste Regulations (Chapter 173-303 WAC)	No[(a)]	Subtitle C of RCRA pertains to the management of hazardous waste. Off-site disposal of impacted soil meeting hazardous waste criteria may require disposal at a Subtitle C landfill. It is assumed that the excavated, impacted soil at the site will not meet hazardous waste criteria.
Federal	Solid Waste	RCRA (42 USC § 6901 et seq.), Subtitle D—Managing Municipal and Solid Waste (40 CFR Parts 257 and 258)	Yes	Subtitle D of RCRA establishes a framework for management of nonhazardous solid waste. These regulations establish guidelines and criteria from which states develop solid waste regulations. These requirements are applicable to the remediation alternatives that involve off-site disposal of impacted soil.
State	Solid Waste	Washington State Solid Waste Handling Standards (RCW 70.95; Chapter 173-350 WAC)	Yes	Washington State Solid Waste Handling Standards apply to facilities and activities that manage solid waste. The regulations set minimum functional performance standards for proper handling and disposal of solid waste; describe responsibilities of various entities; and stipulate requirements for solid-waste-handling facility location, design, construction, operation, and closure. These requirements are applicable to remediation alternatives that involve off-site disposal of impacted soil.
Federal / State	Solid Waste	Land Disposal Restrictions (40 CFR Part 268) (Chapter 173-303-140 WAC)	No	Best management practices for waste disposal are required to meet state and federal requirements. It is not anticipated that the remediation alternatives will generate waste that meets dangerous waste criteria as defined by WAC 173-303-140.
State	Air	Washington Clean Air Act and Implementing Regulations (Chapter 173-400-040[8] WAC)	Yes	These regulations require the owner or operator of a source of fugitive dust to take reasonable precautions to prevent fugitive dust from becoming airborne and to maintain and operate the source to minimize emissions. These regulations are applicable to all alternatives during construction.

Table 4-1
Applicable, Relevant, and Appropriate Requirements
Bellingham School District Bus Garage

Authority	Resource	Implementing Laws/Regulations	ARAR	Applicability
State	Groundwater	Minimum Standards for Construction and Maintenance of Water Wells (RCW 18.104; Chapter 173-160 WAC)	No	Washington State has developed minimum standards for constructing water and monitoring wells and for the decommissioning of wells. Drilling or abandoning wells is not required in the alternatives.
Federal	Endangered Species, Critical Habitats	Endangered Species Act (ESA) (16 USC §§ 1531–1544) and Implementing Regulations	No	The ESA protects species of fish, wildlife, and plants that are listed as threatened and/or endangered. It also protects designated critical habitat for listed species. This is not applicable based on a terrestrial ecological evaluation performed at the site.
State	Remedy Construction	Washington Industrial Safety and Health Act (RCW 49.17; Chapter 296-24 WAC)	Yes	Site worker and visitor health and safety requirements established by the Washington Industrial Safety and Health Act are to be met during implementation of the remedial action.
Local	Remedy Construction	Local Ordinances	Yes	Appropriate requirements are to be met for implementation of the remedial action.
Location-Specific ARARs				
State	Aquatic Lands	Aquatic Lands Management—Washington State (RCW 79.90; Chapter 332-30 WAC)	No	The Aquatic Lands Management law develops criteria for managing state-owned aquatic lands. Aquatic lands are to be managed to promote uses and protect resources as specified in the regulations. The AOIs to which the remediation alternatives apply are not on state-owned aquatic lands.
State	Public Lands	Public Lands Management (RCW 79.02)	No	Activities on public lands are restricted, regulated, or proscribed. The site is owned by the District and is not considered state-owned public land.
Federal / State	Historic Areas	Archaeological and Historic Preservation Act (16 USC § 469, 470 et seq.; 36 CFR Parts 65 and 800) (RCW 24.34, 27.44, 27.48, and 27.53; Chapters 25-46 and 25-48 WAC)	No	Actions must be taken to preserve and recover significant artifacts, preserve historic and archaeological properties and resources, and minimize harm to national landmarks. There are no known historic or archaeological sites in the vicinity of the AOIs.

Table 4-1
Applicable, Relevant, and Appropriate Requirements
Bellingham School District Bus Garage

Authority	Resource	Implementing Laws/Regulations	ARAR	Applicability
State	Shorelines and Surface Water	Shoreline Management Act of 1971 (RCW 90.58) and Implementing Regulations	Yes	Actions are prohibited within 200 feet of shorelines of statewide significance unless permitted. This is applicable to cleanup action areas along Whatcom Creek on the north border of the site; therefore, a permit for work in these areas should be obtained.
State	Wetlands	Shoreline Management Act of 1971 (RCW 90.58) and Implementing Regulations	No	The construction or management of property in wetlands is required to minimize potential harm, avoid adverse effects, and preserve and enhance wetlands. The remediation alternatives are not located in delineated wetlands.
Local	Air Emissions	Regional Emission Standards for Toxic Air Pollutants, NWCAA	No	A source of toxic air contaminants requires a notice of construction. This is not applicable to the site.

Notes

[a]Assumes that excavated material will be characterized and profiled as non-hazardous waste.

ARAR = Applicable or relevant and appropriate requirements.

AOI = area of interest.

CWA = Clean Water Act.

District = Bellingham School District.

Ecology = Washington State Department of Ecology.

ESA = Endangered Species Act.

MTCA = Model Toxics Control Act.

NPDES = National Pollutant Discharge Elimination System.

NWCAA = Northwest Clean Air Agency.

RCRA = Resource Conservation and Recovery Act.

RCW = Revised Code of Washington.

USC = United States Code.

WAC = Washington Administrative Code.